Major CDRs Training Symposium

Ballistic Missile Defense

CAPT Joe Horn

Agenda

- BMDS Overview
- Test Progress
- Navy BMD Systems
- Capacity – Ships & Missiles
- Sea-Based Terminal
- Current Threat
- Mission Planning
- SBX
- BMD EXCOMM Series

Integrated Ballistic Missile Defense System (BMDS)

Rev: 3.0, 1/16/07
Approved for Public Release 07-MDA-2370 (27 MAR 07)

Sensors

Defense Support Program

Space Tracking And Surveillance System

Sea-Based Radars

Forward-Based Radar With Adjunct Sensor

Midcourse X-Band Radar

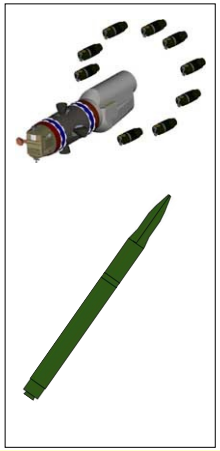
Early Warning Radar

Boost Defense Segment | **Midcourse Defense Segment** | **Terminal Defense Segment**

Airborne Laser

Kinetic Energy Interceptor

Aegis Ballistic Missile Defense / Standard Missile-3



Multiple Kill Vehicle

Ground-Based Midcourse Defense

Terminal High Altitude Area Defense

Sea-Based Terminal

Patriot Advanced Capability-3

Command, Control, Battle Management & Communicat

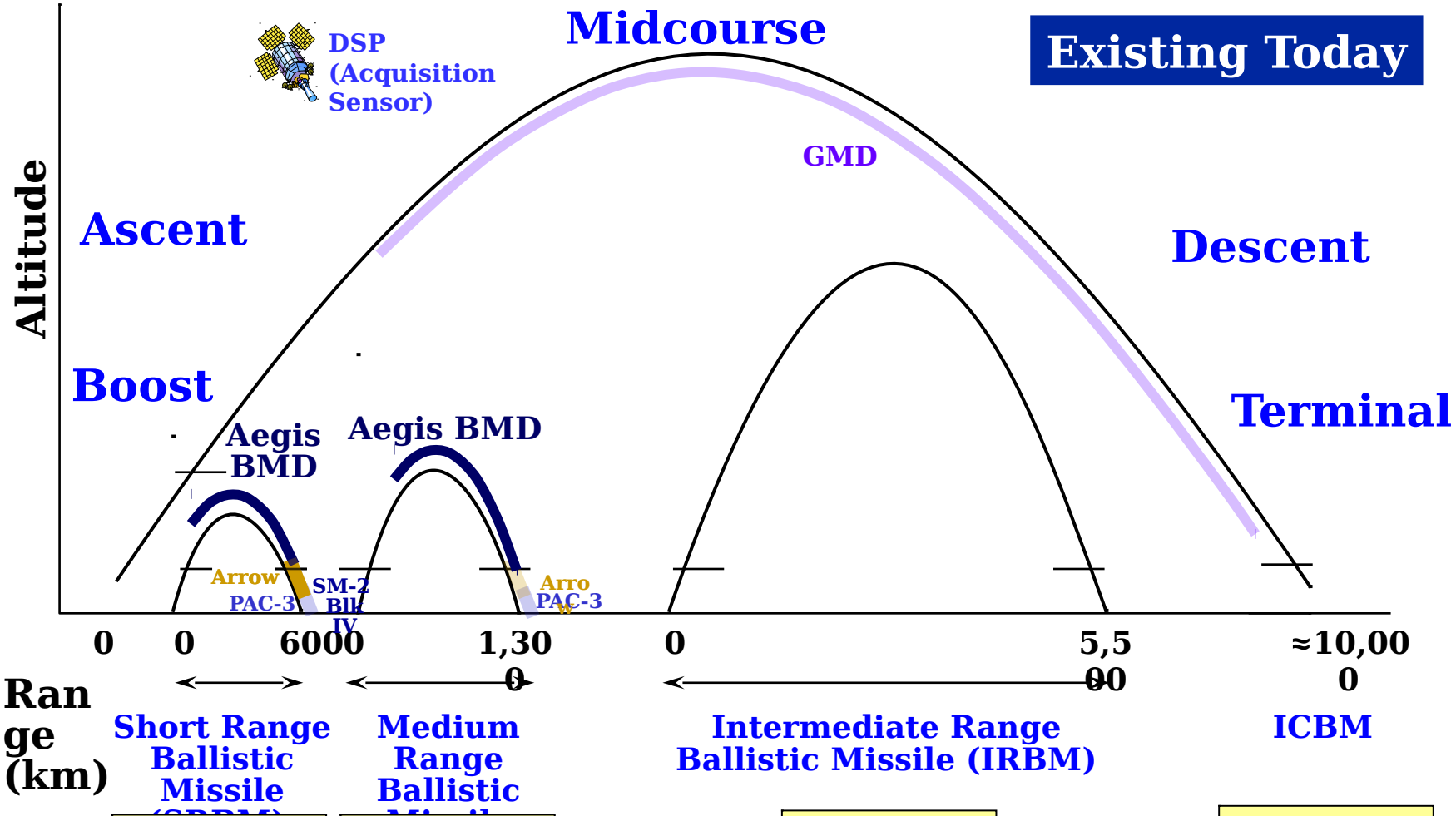
NMCC USSTRATCOM USNORTHCOM USPACOM EUCOM CENTCOM

Core Navy Equities

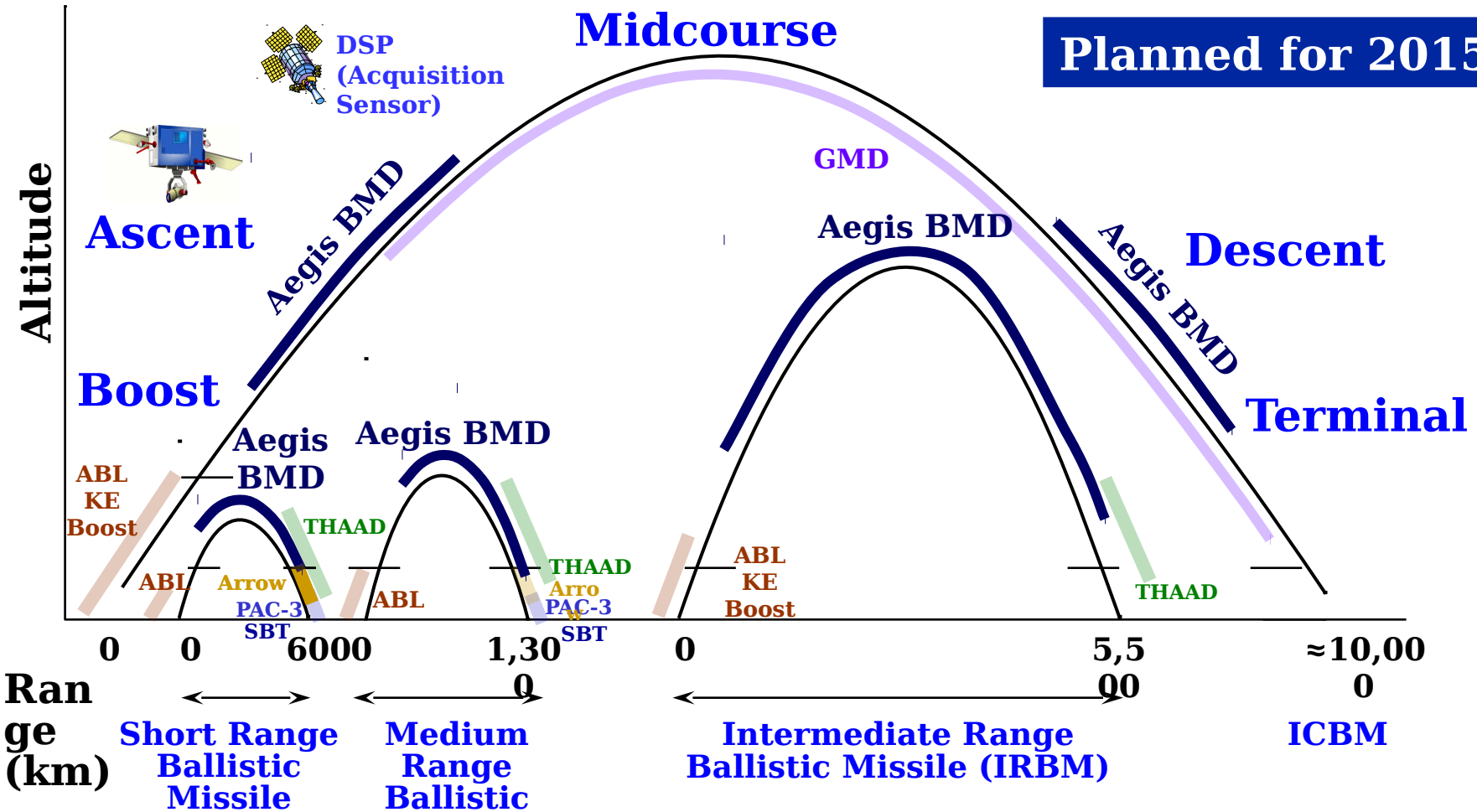
BMDS Integration / Collaboration

UNCLASSIFIED

Layered Defense (Against All Missiles, All Ranges, All Phases)



Layered Defense
(Against All Missiles, All Ranges, All Phases)

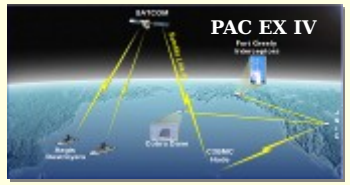


Testing Progress

LRS&T

First ICBM Tracking: 19 Sep 02

BMDS

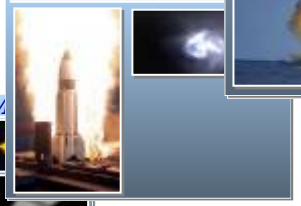


26 Apr 07
FTM 11

22 Jun 06
FTM 10

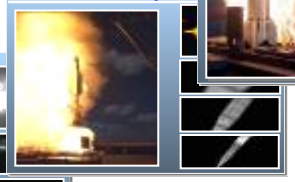
- SM-3 and SM-2
- Near Simultaneous
- Aegis 3.6

17 Nov 05
FTM 04-2 (FM-8



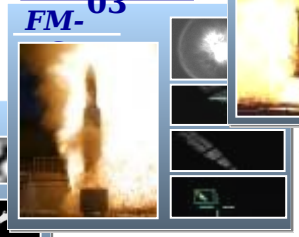
- SM-3 BLK IA
- Aegis 3.6
- First Coalition Test
- Separating Warhead

24 Feb 05
FTM 04-1 (FM



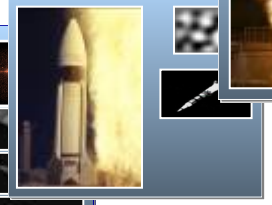
- No Notice Fi

11 Dec 03
FM-



- Descent Phase With Aim Point Adjust

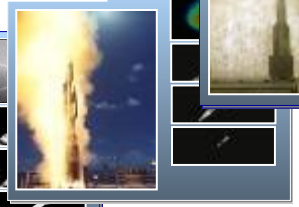
18 Jun 03
FM-



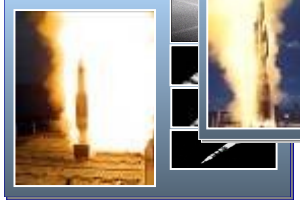
21 Nov 02
FM-4

- Ascent Phase Intercept

13 Jun 02
FM-3



25 Jan 02
FM-2



- First Intercept

ICTV-

oint Cooperative Research

Pacific Phoenix

Sea Based Terminal

Future Testing

- FTM-12: Cued Engagement and Lethal Intercept of a MRBM
- FTM-13: Engage Two Near Simultaneous SRBMs
- FTM-14: Engage IRBM Threat (Launch on TADIL)

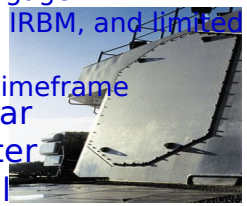
Intercepts
1 for 1 in SM-2 Block IV Terminal

Navy Ballistic Missile Defense Systems

Aegis BMD Baselines

- **BMD 3.0E – Fielded Today - SENSOR**
  - Long Range Surveillance and Track (LRS&T)
- **BMD 3.6 – Fielded Today - SENSOR/SHOOTER**
  - LRS&T and Engage
  - SRBM and MRBM Defense
  - Some AAW capability
- **BMD 4.0.x – Future - SENSOR/SHOOTER**
  - LRS&T and Engage
  - SRBM, MRBM and limited IRBM Defense
  - 2010- 2012 timeframe
- **BMD TBD – Future - SENSOR/SHOOTER**
  - LRS&T and Engage
  - SRBM, MRBM, IRBM, and limited ICBM Defense
  - 2012 – 2014 timeframe

SPY-1



- Legacy Aegis radar
- BMD Capable after MDA-funded Signal Processor (SIGPRO) mods
- Increased Capability with FY10 addition of BMD SIGPRO – Allows Better Target Discrimination

SM-3 Block I/IA/IB

Theater BMD

MDA Funded (147 approx $9M/round)
- IOC: Blk IA FY06
- Kinetic Kill Vehicle for exoatmospheric hit-to-kill

SM-2 BLK IV

Gap-Filler Sea-Based Terminal (SBT)
- Available upon fuze conversion (100)
- Currently three CGs with emergency Linebacker software load
- Provides limited SRBM Terminal Defense (APOD/SPOD defense only)

SM-3 Block II/IIA

Regional/Homeland BMD

MDA/Japan Co-development (50/50 – MOU signed)
- Approx $15M/round
- IOC: Blk II FY 11
- Full 21” propulsion stack; increases ship station flexibility

Sea-Based Terminal Intercept

Robust Sea-Based Terminal (SBT)

APOD/SPOD & Joint Sea Base Defense
- Missile TBD
- IOC: FY14
- MDA planning in progress

EXO

ENDO

PB08 in $M	FY07	FY08	FY09	FY10	FY11	FY12	FY 13	FY07-FY13
* MDA (Aegis BMD)	1007.9	977.3	1073.1	1160.1	1016.1	1004.0	1038.3	7276.8
Navy (O&S)	15.8	12.7	16.9	20.5	19.0	19.6	20.1	124.6

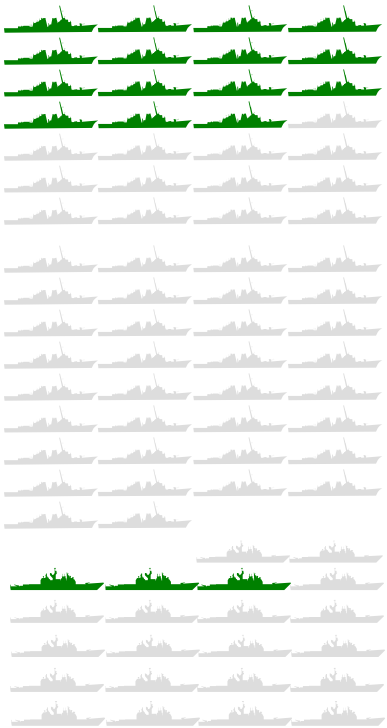
Legend: Purple – MDA Funding; Blue – Navy Funding

*** Note: MDA Funding is Aegis BMD only; SBX funding is in addition to funding shown here**

BMD Capacity: Ship Inventory

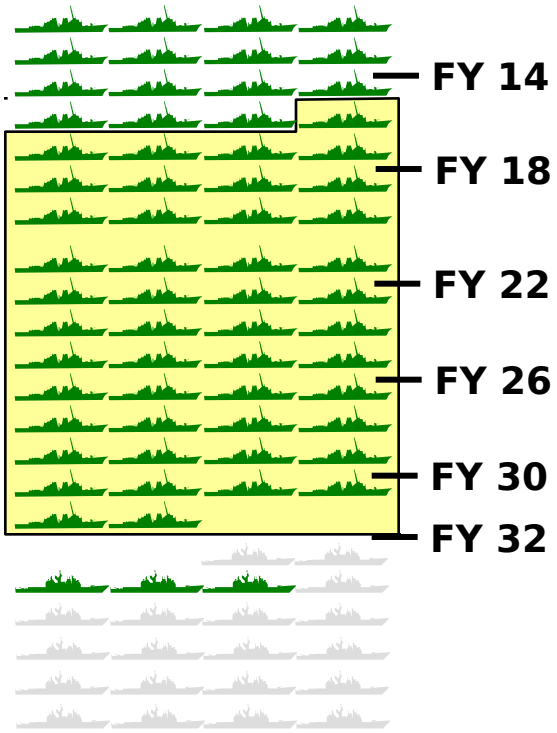
MDA POR

- 15 BMD DDG + 3 BMD CG



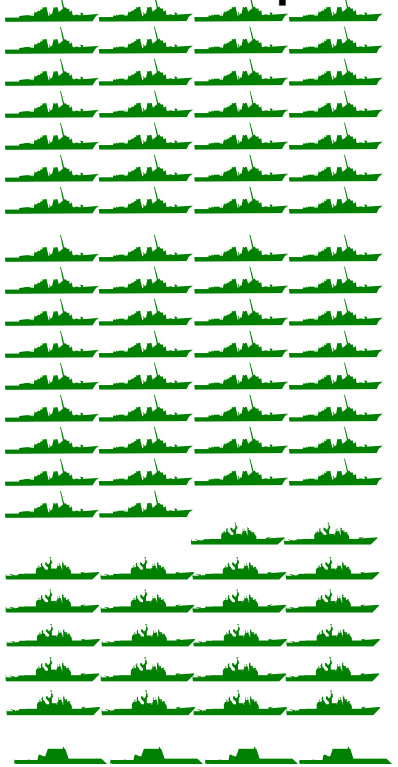
Current DDG Mod Plan

- 62 BMD DDG



Possible Future Beyond FYDP

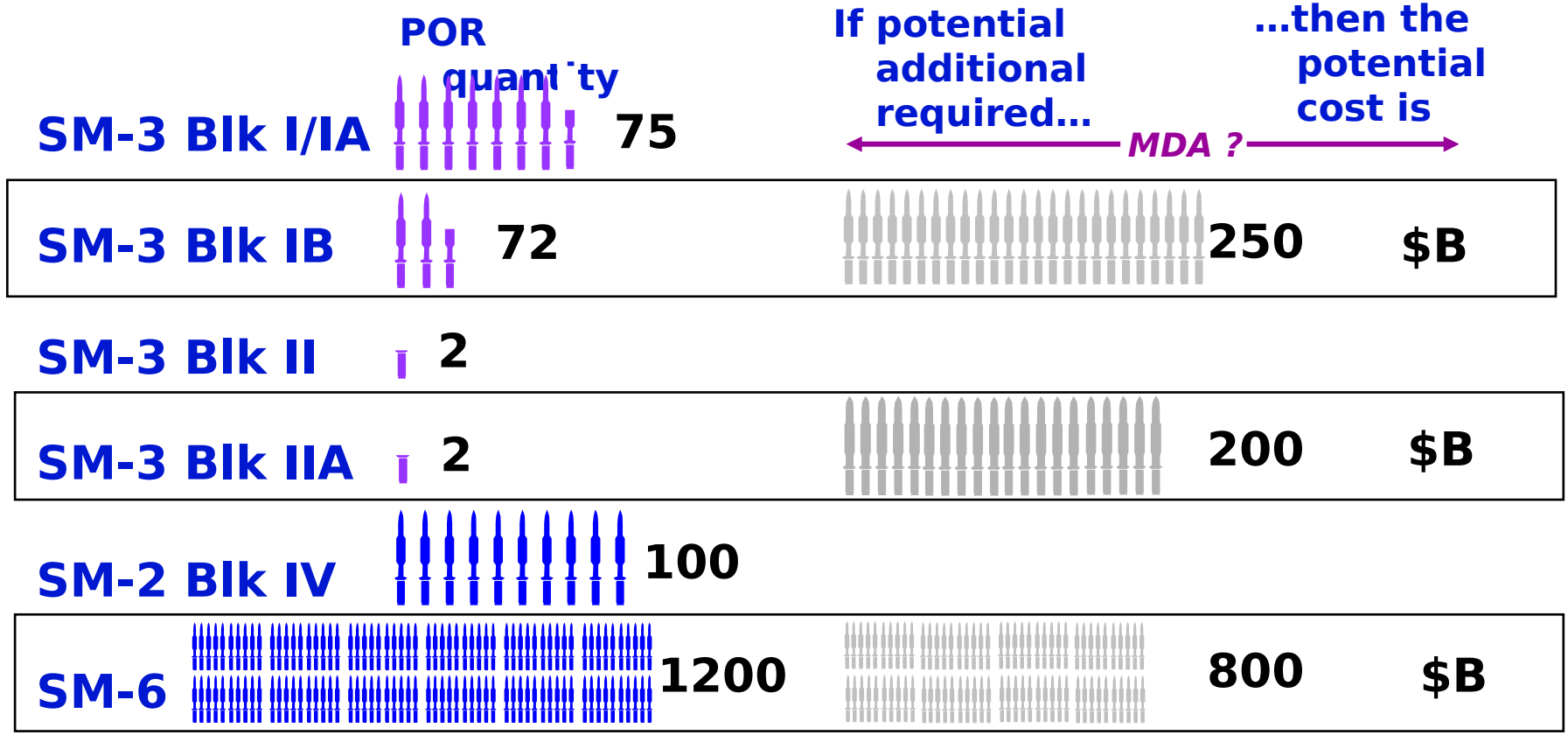
- 62 BMD DDG + 22 BMD CG + CGX
- Full fleet BMD capability



Non-BMD Aegis

BMD Capable

BMD Capacity: Missile Inventory



Missile costs dominate overall BMD bill

MDA funded

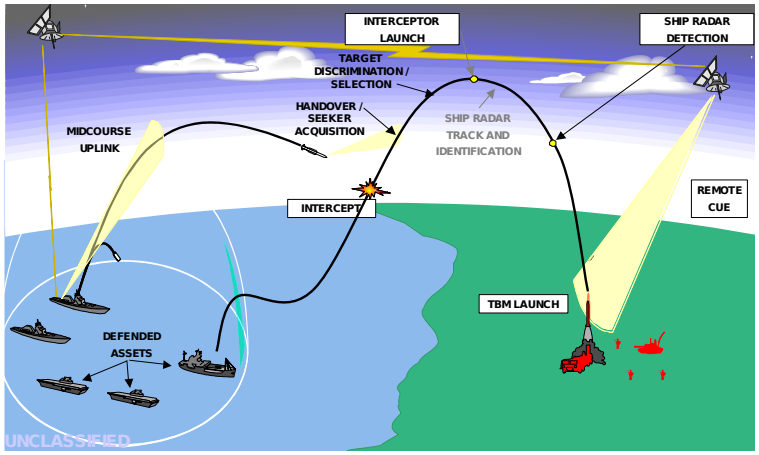
Navy funded

Unfunded

Sea-based Terminal (SBT)

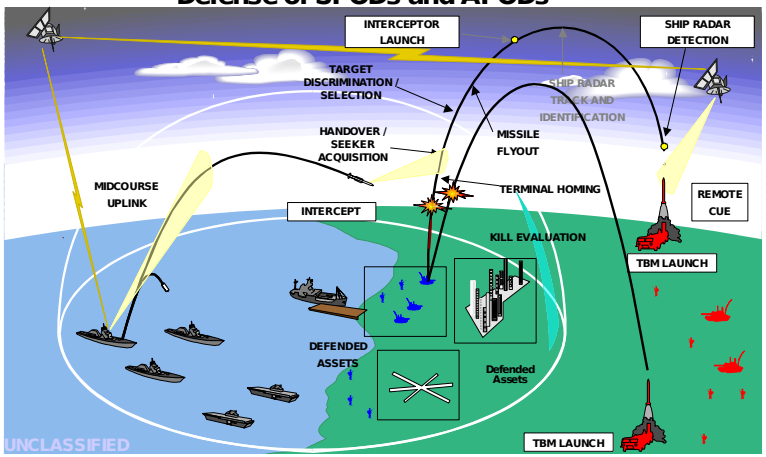
- Defend Sea Base and Joint forces at sea
  - Sea-based systems generally only available defense
  - SBT adds layer
  - Beyond Linebacker

Defense of the Sea Base



- Defend forces, Air and Sea Ports of Debarkation (APODs/SPODs), and critical assets ashore
  - Early defense for crisis response or transition-to-war in immature theaters
  - Add capacity to augment ground-based TBMD
  - Homeland defense against asymmetric threats

Defense of SPODs and APODs



CJTF Options When Other BMDS Capabilities Are Insufficient or Not Available

SBT Way Ahead

- **Today: Emergency Capability**
  - **Linebacker Program…three copies ready**
  - **Emergency activation**
- **2009: Gap-Filler SBT**
  - **Aegis BMD 3.6.1**
    - **Linebacker + SM-2 Blk IV capability integrated into BMD 3.6**
  - **Modified SM-2 Blk IV missiles**
- **Long Term/Robust: new interceptor**
  - **MDA program; OPNAV participating in development**
  - **Aegis BMD 5.X**
  - **Interceptor TBD (SM-6 preferred)**

Current Threat

Placeholder for three classified charts

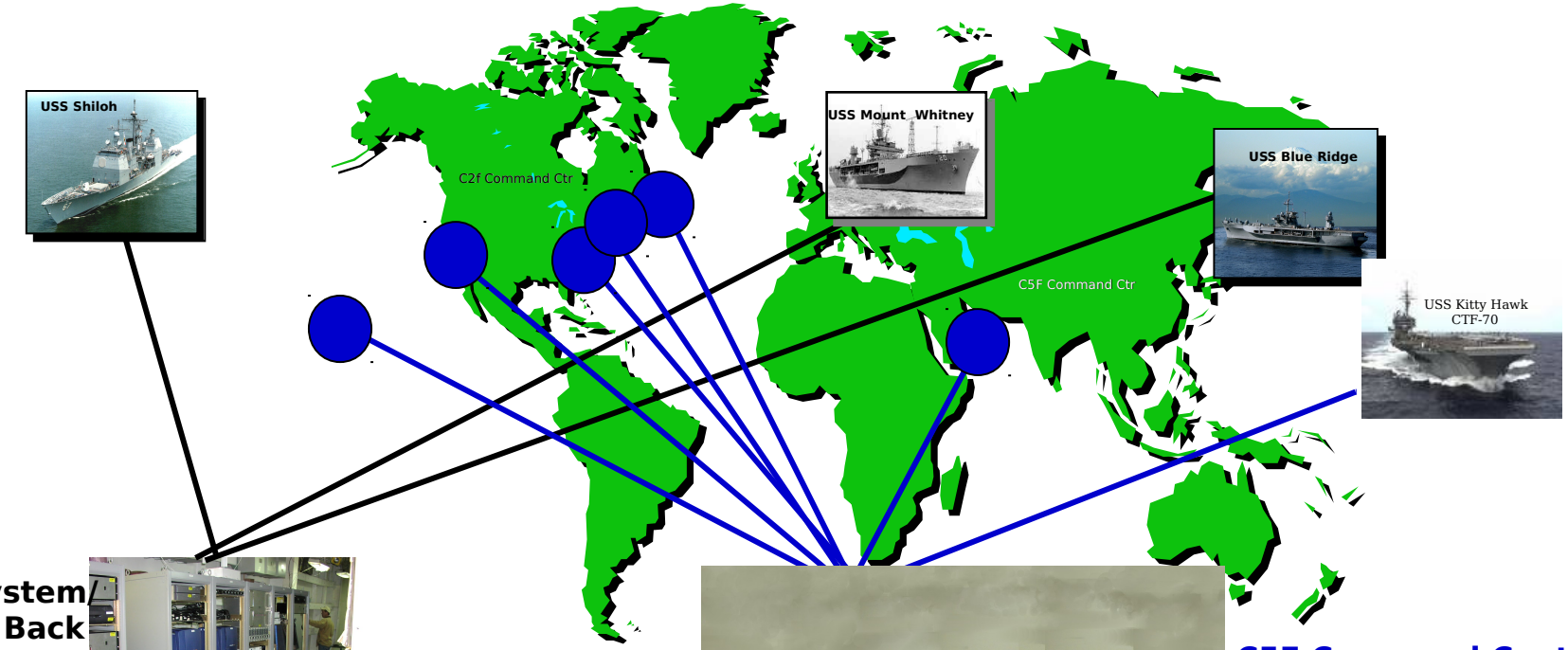
Maritime Integrated Air and Missile Defense Planning System (MIPS)

- Events of 04 July highlighted need for Operational Level, multi-platform, multi-threat planner
  - Current single-ship laptop planner useful for radar doctrine; insufficient for operational planning

- Near Term: Legacy Area Air Defense Commander Capability System (AADCCS) becomes MIPS Increment 0
  - One time gap filler effort
  - Updated with current SM-3, SM-2 fly outs
  - Updated with current threat
  - Sites shown below

- Long term: Future MIPS capability embedded in Aegis BMD baseline
  - OPNAV, Aegis BMD, PEO IWS team effort
  - Planned to deliver FY10

Current MIPS Deployment



Full System/ Reach Back Site

USS Shiloh
USS Blue Ridge
*** USS Mount Whitney**
Tactical Training Group Atlantic

Deployable Client

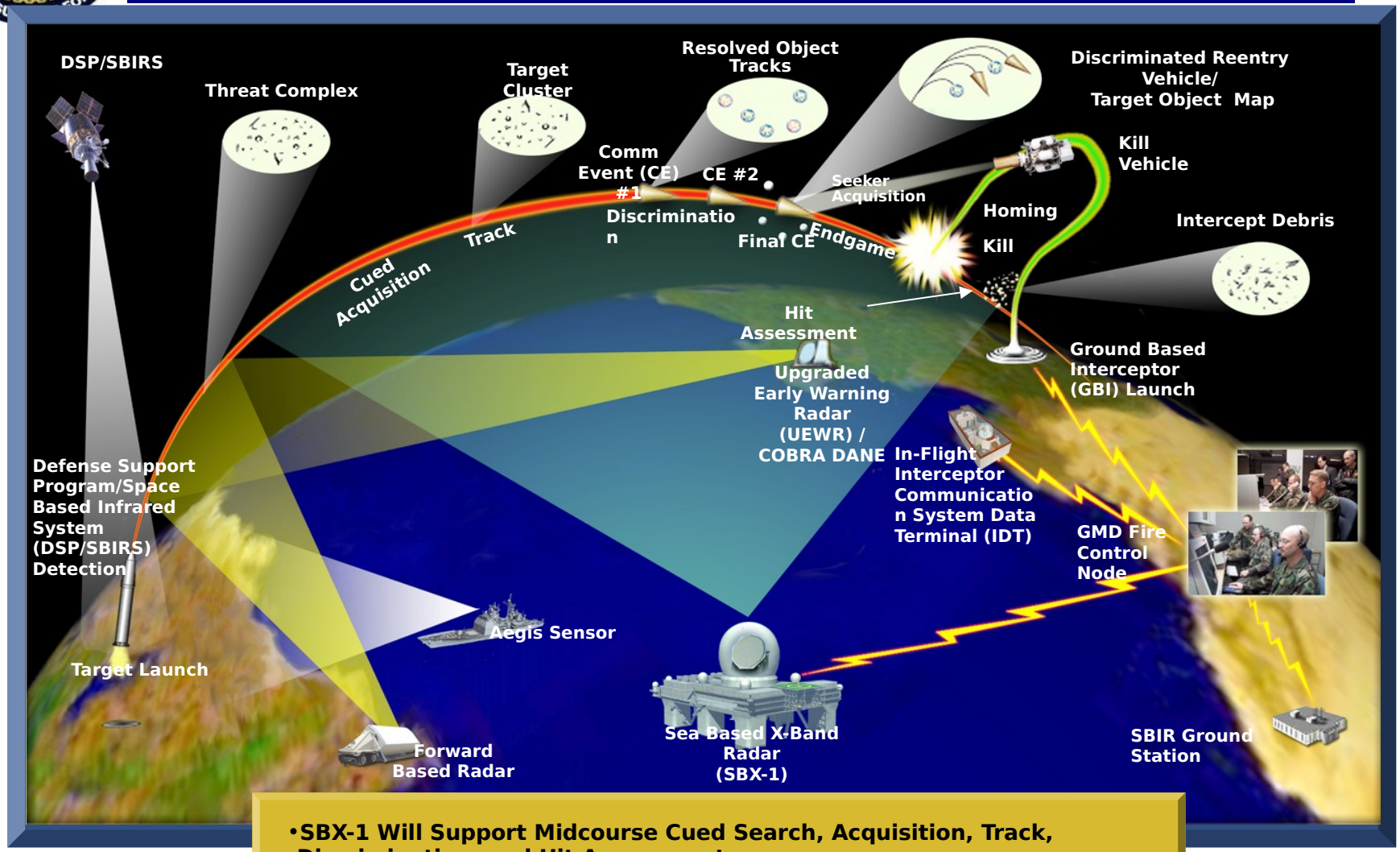
C5F Command Center
CTF-70
C2F Command Center
C3F Command Center
PACFLT
NSWC/DD

* Not Currently Operational

SBX

- High-power X-band radar on mobile oil rig
- Two purposes
  - Operational BMDS asset
  - MDA test event support
- CNO letter to LtGen Obering: Navy will accept Lead Service
  - Contingent upon budget-based TOA transfer of O&S funds
  - Maritime Component Commander to exercise C2
- Navy SBX Lead Service Implementation Team (N86 Lead)
  - OPNAV N3/5, N4, N8
  - DASN(IWS)
  - NAVSEA (05)/PEO(IWS)
  - USFFC (N8, N4)
  - MSC
- Targeting FY08/09 for transition
  - Potential Congressional involvement in TOA transfer

SBX Radar Role in BMDS Architecture



- SBX-1 Will Support Midcourse Cued Search, Acquisition, Track, Discrimination, and Hit Assessment
- Performs Precision Track And Midcourse Discrimination
- Provides Discriminated Reentry Vehicle To GMD Fire Control (GFC)
- Provides Data on All Target Complexes to Help Develop Target Object

BMD EXCOMM Series

EXCOMM #1: April 2007
Navy BMD Policy within the Maritime Strategy, and Supporting Analysis
(N3/5 and N81)

EXCOMM #2: June 2007
Fleet Posture, CONOPS, and Concerns
(CFFC/CPF)

EXCOMM #3: August 2007
Current BMD Programs (including MDA) and Navy POM-10 Game Plan
(N86, N1)

EXCOMM #1

Obj: Policy discussion …
"What we are going to do?"
- Note recent events
- Revisit threat projections

Key: To what extent will Navy do BMD …
- Sea Base defense
- Defense of APODs, SPODs, and Maneuver Forces ashore
- Defense of allies, friends, and national interests
- Homeland Defense

Key: Include force structure implications

EXCOMM #2

Obj: CONOPS and gaps discussion …
"How are we going to do BMD?"

Key: How does the fleet employ the BMD capabilities they have and will have soon
1. Ships
2. Missiles
3. Robust C^4
4. C^2 relationships

Key: Identify gaps

EXCOMM #3

Obj: Review BMD programs …
"What program is needed to meet the strategy and priorities?"

Key: Does capability align with the Navy BMD strategy?

Key: Does the program deliver desired capability … now … later?

Key: If remaining gaps, what actions to resolve?
1. Adjust CONOPS
2. Adjust the program
3. Cha…

POM-10 Strategic Guidance

Wrap Up

- Working relationship with MDA/Aegis BMD is solid
- Navy share of BMD likely to grow
  - Proven capability
  - Primarily an access issue
- Decisions pending for BMD
  - Establish right level of Navy BMD ownership
  - Determine Force Structure implications
  - Make adjustments in POM-10

QUESTIONS ?